

Blue

Work Order ID 53276

October 30, 2009 1:46:24 PM



Page 1

Item ID: D206-667-103BL

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Fwd, Blue

Start Date: 29/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 09/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: AP

Date: 09-10-30 Tooling:

Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_

Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D206-667-143

C

100 0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels as per PPP D206-667-103 CHG004

507/11/20

110

0.00



Packaging

Packaging

Memo

0.00

Packaging

1X

Q

MB 09-11-12

120

0.00



BENDING MACHINE - CROSSTUBES

CNC Bend 2

Memo

0.00

CNC Alpha 160 Bender

Bend tube as per Dwg D206-667-143 using CNC bender program

1X

Q

MB 09-11-12

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October 30, 2009 1:46:24 PM



Page 2

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Required Date: 09/11/2009 Req'd Qty: 1.00



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Reference:

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Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

130

QC15- Crosstube Dimensional Check

0.00



QC

Memo

0.00

Quality Control

1 \_\_\_\_\_ \_\_\_\_\_ \_\_\_\_\_ *PS-11-13*

**Work Order ID 53276**

October 30, 2009 1:46:24 PM



Page 3

Item ID: D206-667-103BL

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Fwd, Blue

Start Date: 29/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 09/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140  Crosstubes	Crosstubes	0.00							
Crosstubes	<b>Memo</b> 1-Drill holes & ream using drill Jig DT8541 & DT8542 as per Dwg D206-667-143. Drill all (3) top holes.  3-Flip tube and switch drilling Jigs from right to left, left to right. Locate Jigs off existing holes using "T" pins.  4-Drill pilot holes using drill Jig DT8541 & DT8542 as per Dwg D206-667-143. Drill only the top (2) holes.  5-Drill pilot holes as per Dwg D206-667-143. Drill only the top (2) holes.  6-Drill Fwd rivet holes using drill Jig DT8787FWD as per Dwg D206-667-143. Note: Fwd side has 3x top holes.  7-Drill Aft rivet holes using drill Jig DT8787AFT as per Dwg D206-667-141.  8-C'sink holes as per Dwg D206-667-143. Allow rivet to sit below surface to compensate for paint.  9-Scribe part # and batch # using vibrating stylus as per Dwg D206-667-143 Inside of Cuff(Donot engrave on outside of tube)  10-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D206-667-143	0.00							

DP  
9-11-16

AWM 9-11-16

# Work Order ID 53276

October 30, 2009 1:46:24 PM



Page 4

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Start Date: 29/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 09/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

Hand Finishing Crosstubes

1 - - AWM 9-11-16

160

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

27 802/11/12

170

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

27 802/11/12

**Work Order ID 53276**

October 30, 2009 1:46:24 PM



Page 5

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Accept



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Stop



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Cust Item ID:

Required Date: 09/11/2009 Req'd Qty: 1.00

Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

180



Outsource2

Outsource process - NDT per QSI038 4.1

0.00

0.00

P.D. 1071

CL 09/11/18 ①

Outsource process - NDT

Memo

CROSSTUBES

190



Packaging

Packaging

0.00

0.00

Memo

Ensure copy of NDT results attached to work order.

P 09/11/18 ①

200



QC

QC5- Inspect part completeness to step on W/O

0.00

0.00

Memo

Quality Control

ML 09 11 18 ①

**Work Order ID 53276**

October 30, 2009 1:46:24 PM



Page 6

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Cust Item ID:

Required Date: 09/11/2009 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210		0.00							
	SprayPaint								
SprayPaint	Memo	0.00							
Spray Painting	PRIME GREY 13110918								
	SPRAY PAINT DELFLEET BLUE 13113171								
	CLEAR DELFLEET 13110896								
220		0.00							
	QC14- Inspect Spray Paint								
QC	Memo	0.00							
Quality Control	INSPECT SPRAY PAINT								

M 09 11 18 ①

ST 09 - 11 - 19

# Work Order ID 53276

October 30, 2009 1:46:24 PM



Page 7

Item ID: D206-667-103BL

Accept



Setup Start



Revision ID:

Stop



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Start Date: 29/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 09/11/2009 Req'd Qty: 1.00

Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

230

0.00



Crosstubes

ml 09 11 19 (1)

Crosstubes

Memo

0.00

1-Install support using 0.03" to 0.06" thick layer of magnobond 6398 per QSI 015. Let cure for 12h after installation and prior to packaging. Note: (2) Aft holes should be facing up.  
A/R Magnobond 6398 : 112417 exp: 01/2011

2-Install supports and clamps as per Dwg D206-667-143. Torque clamps to 80-100 in lb

3-Install nut plates as per Dwg D206-667-143. Touch-up rivet heads with Imron paint.

240

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

=> 801/1/19

(46) /

Rubber Cushion 3B #44667 x4  
D3595-063-395

# Work Order ID 53276

October 30, 2009 1:46:24 PM



Page 8

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Stop



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Cust Item ID:

Required Date: 09/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

250

Pick Kit

0.00



Packaging

Memo

0.00

Packaging

9/11/30 SLP ASD

260

QC4- 100% Inspect kits for completeness

0.00



QC

Memo

0.00

Quality Control

> 802/11/20

XL 8

270

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPP D206-667-103

Location: \_\_\_\_\_

PPP Rev: \_\_\_\_\_

D

LC 4/24/20 (2)



**Work Order ID 53276**

October 30, 2009 1:46:24 PM



Page 9

Item ID: D206-667-103BL

Accept



Setup Start



Revision ID:

Stop



Item Name: Crosstube Fwd, Blue

Start Date: 29/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 09/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

280

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

09-11-20

MF  
09-11-20

# Picklist Print

Page 1

October 30, 2009 1:46:32 PM

Work Order ID: 53276



Parent Item: D206-667-103BL



Parent Item Name: Crosstube Fwd, Blue

Start Date: 29/10/2009


Required Date: 09/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	--------------------------	---------------	----------------	--------

AN5-30A		Purchased	No				Each	107.0000	4.0000			
<div style="display: flex; justify-content: space-between;"> <div>  <p>BOLT</p> </div> <div> <p><u>Warehouse</u></p> <p><u>Location</u></p> <p>Main Warehouse</p> <p>ST</p> <p><u>110467</u></p> <p>112933</p> </div> <div> <p><u>Loc Qty</u></p> <p>107</p> <p>57</p> <p>50</p> </div> <div> <p><u>Loc Code</u></p> <p></p> </div> <div> <p></p> <p>9/11/20</p> <p>SP</p> </div> </div>												

AN5-32A		Purchased	No				Each	147.0000	4.0000			
<div style="display: flex; justify-content: space-between;"> <div>  <p>Bolt</p> </div> <div> <p><u>Warehouse</u></p> <p><u>Location</u></p> <p>Main Warehouse</p> <p>ST</p> <p>106242</p> <p>106519</p> <p>110363</p> <p>112082</p> <p><u>112805</u></p> <p>112933</p> </div> <div> <p><u>Loc Qty</u></p> <p>147</p> <p>3</p> <p>4</p> <p>17</p> <p>23</p> <p>50</p> <p>50</p> </div> <div> <p><u>Loc Code</u></p> <p></p> </div> <div> <p></p> <p>9/11/20</p> <p>SP</p> </div> </div>												

<u>Warehouse</u>		<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>			
Main Warehouse			
ST		147	
106242		3	
106519		4	
110363		17	
112082		23	
<u>112805</u>		50	
112933		50	

4x50

4x50

4x50

# Picklist Print

Page 2

October 30, 2009 1:46:32 PM

Work Order ID: 53276

Parent Item: D206-667-103BL

Parent Item Name: Crosstube Fwd, Blue


Comments:

Start Date: 29/10/2009

Required Date: 09/11/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN5-7A  Bolt		Purchased	No				Each	110.0000	10.0000			

9/11/20 5

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	60	
110625	7	
111668	3	
<u>112612</u>	50	
Main Warehouse		
t	50	
<u>112829</u>	50	

7x 54

3x

# Picklist Print

October 30, 2009 1:46:32 PM

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Start Date: 29/10/2009

Required Date: 09/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	--------------------------	---------------	----------------	--------

AN960JD516

Purchased

No

Each

1,560.000

18.0000



Washer



911200 sf

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST

1560

100564

2

106167

6

107534

34

107959

43

108246

46

108672

2

109059

49

109752

22

110363

46

110523

57

111279

39

112082

68

112314

500

112794

146

112828

500

18v90

# Picklist Print

Page 4

October 30, 2009 1:46:32 PM

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Parent Item Name: Crosstube Fwd, Blue


Comments:

Start Date: 29/10/2009

Required Date: 09/11/2009

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
AN970-4  Washer		Purchased	No				Each	443.0000	12.0000			

9/14/20 SP

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	443	
104885	3	
107242	3	
107715	1	
108077	2	
108377	19	
111724	3	
112082	5	
112794	9	
112933	98	
112991	300	

12 X SP

D206-667-  
103TRNRevC

Manufactured No



Crosstube Turning DetailL



B-534/13 MB 09-11-12

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
FG	2	
52829	1	
52830	1	

# Picklist Print

October 30, 2009 1:46:32 PM

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Required Date: 09/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2873-043RevA		Manufactured	No				Each	41.0000	2.0000			
Nut Plate Assembly												

RT 09-11-20

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

41

45370

6

45422

15

50002

20

x2

D2873-045RevA

Manufactured

No

Each

59.0000

2.0000



Nut Plate Assembly

RT 09-11-20

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

59

45210

3

46772

16

50001

40

x2

# Picklist Print

Page 6

October 30, 2009 1:46:32 PM

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Required Date: 09/11/2009

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2891-1RevA1 		Manufactured	No				Each	73.0000	2.0000			
2.25 Support												

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	73	
40336	1	
41198	8	
43880	20	
45935	4	
46159	20	
50952	20	

ml 09.11.19

BLUE  
MS20601-AD4W8

Purchased

No

Each

300.0000

14.0000



RIVET

85 09.11.20

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	300	
108521	100	
112203	200	

110399 x 14

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---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	--------------------------	---------------	----------------	--------

MS21042L5

Purchased

No

Each

1,060.000 4.0000



Nut



g lube sf

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

1060

110382

10

111127

4

111636

46

112314

1000

4c 5c

MS21920-20

Purchased

No

Each

151.3000 4.0000



Clamp (per MIL-DTL-8783C)



Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST

151.3

103478

2

106484

12

109269

9.3

110536

10

111281

18

112307

50

112624

39

112793

11

m/ 09 11 19



Item	Qty -143	Part Number	Description
1	X	D206-667-143	CROSSTUBE ASSEMBLY (206L HIGH FWD)
2	1	D6002-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299-947-100, TYPE II, CLASS 2 ADHESIVE)

# **GENERAL NOTES:**

- 1) MATERIAL: MANUFACTURED FROM D6002-115  
FINISHED LENGTH = 104.98±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-143" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 15.5 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 10 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

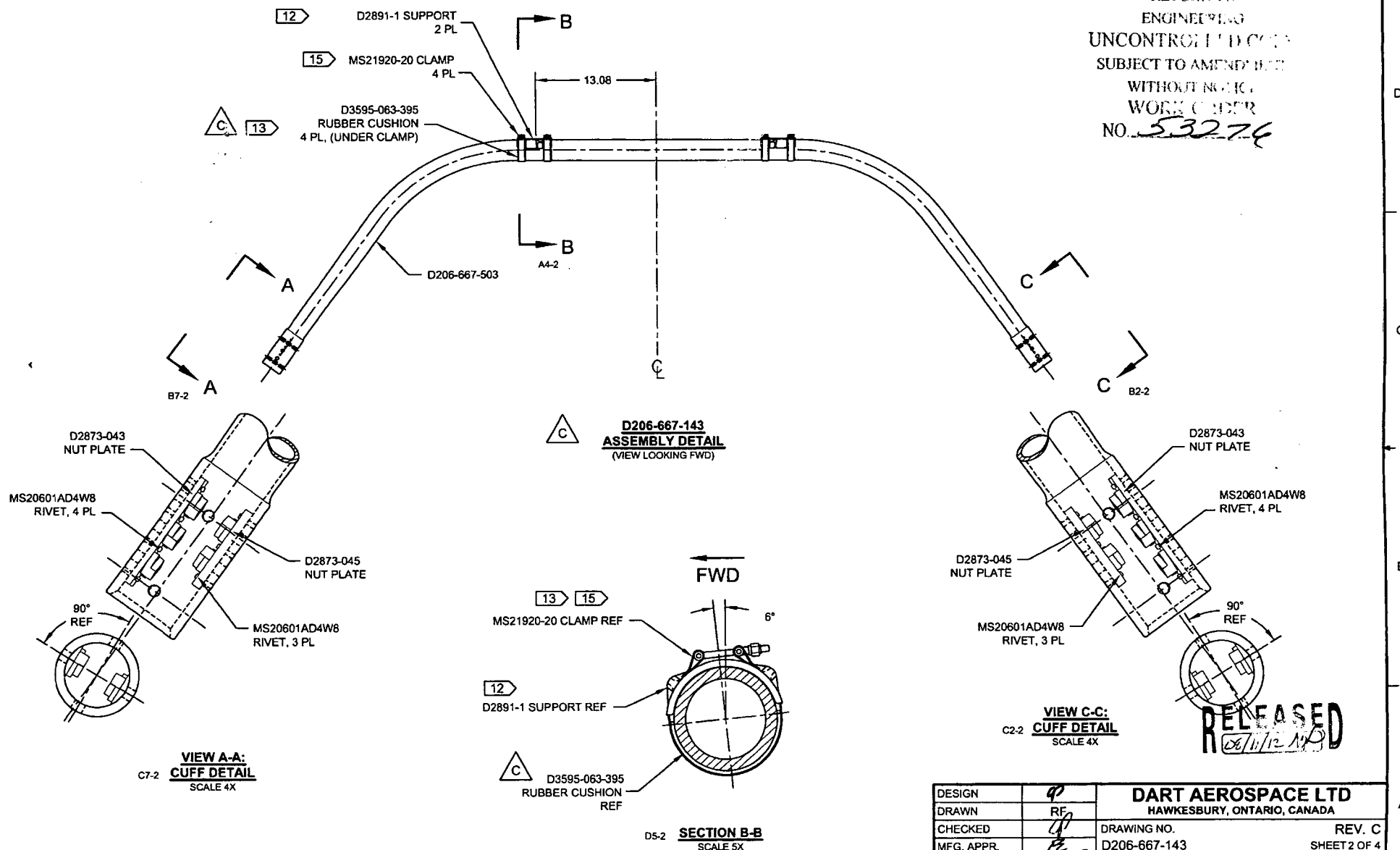
SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 53276

*09-10-30*

**RELEASED**  
*08/11/14*

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-395 WAS D2856-400-694 (ZN D6-2 & A5-2); REMOVED REF. & ADD TOLERANCE (ZN D3-3, C4-3, C5-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	<i>9P</i>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>9P</i>	DRAWING NO.	REV. C
MFG. APPR.	<i>9P</i>	D206-667-143	SHEET 1 OF 4
APPROVED	<i>9P</i>	TITLE	SCALE
DE APPR.	<i>9P</i>	CROSSTUBE ASS'Y (206L HIGH FWD)	NTS
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WORK CENTER  
NO. 53276



DESIGN	9	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	9	DRAWING NO.	REV. C
MFG. APPR.	9	D206-667-143	SHEET 2 OF 4
APPROVED	9	TITLE	SCALE
DE APPR.	9	CROSSTUBE ASSY (206L HIGH FWD)	NTS
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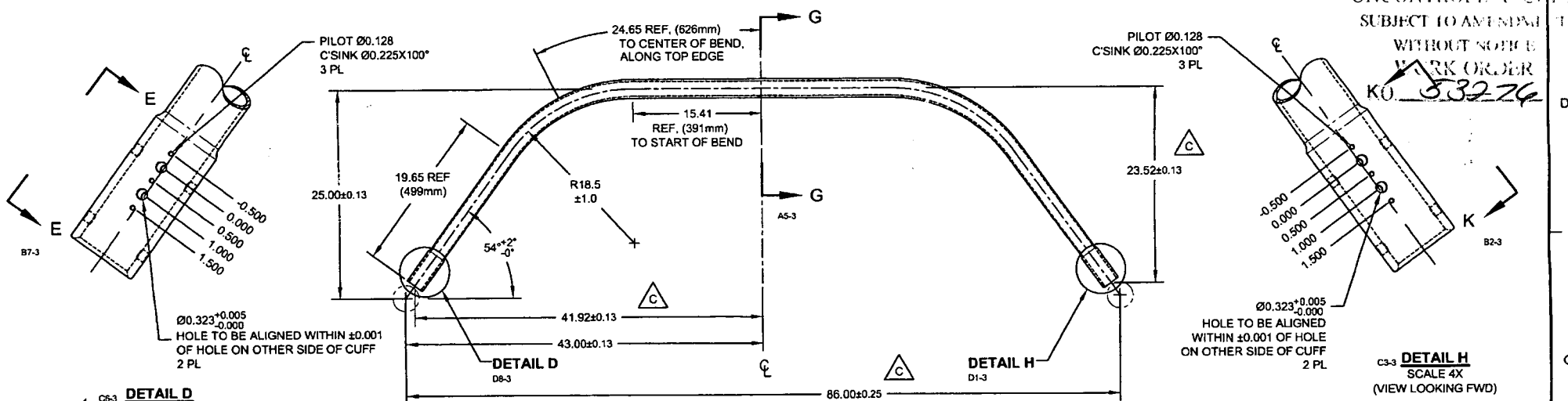
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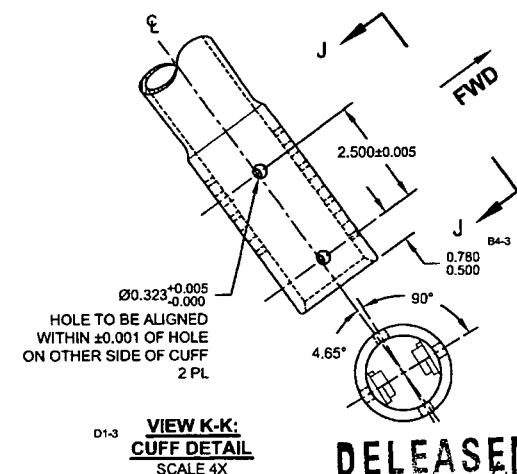
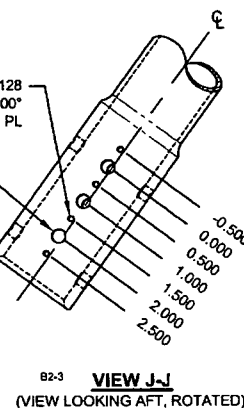
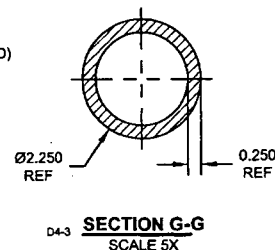
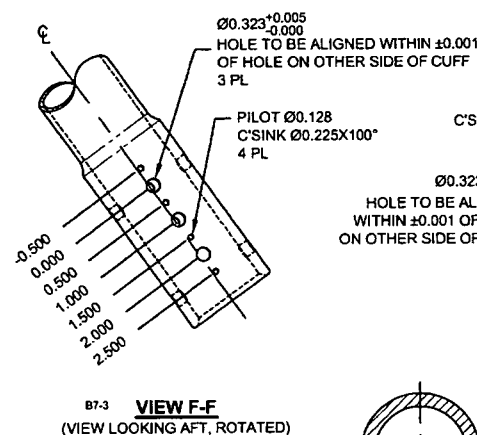
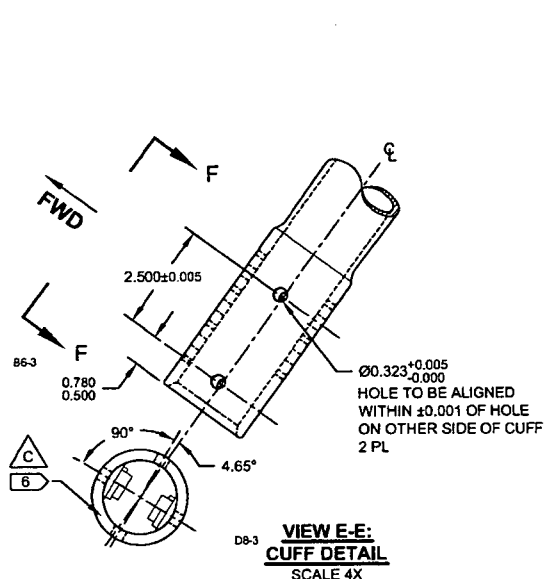
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WORK ORDER

KO 53276

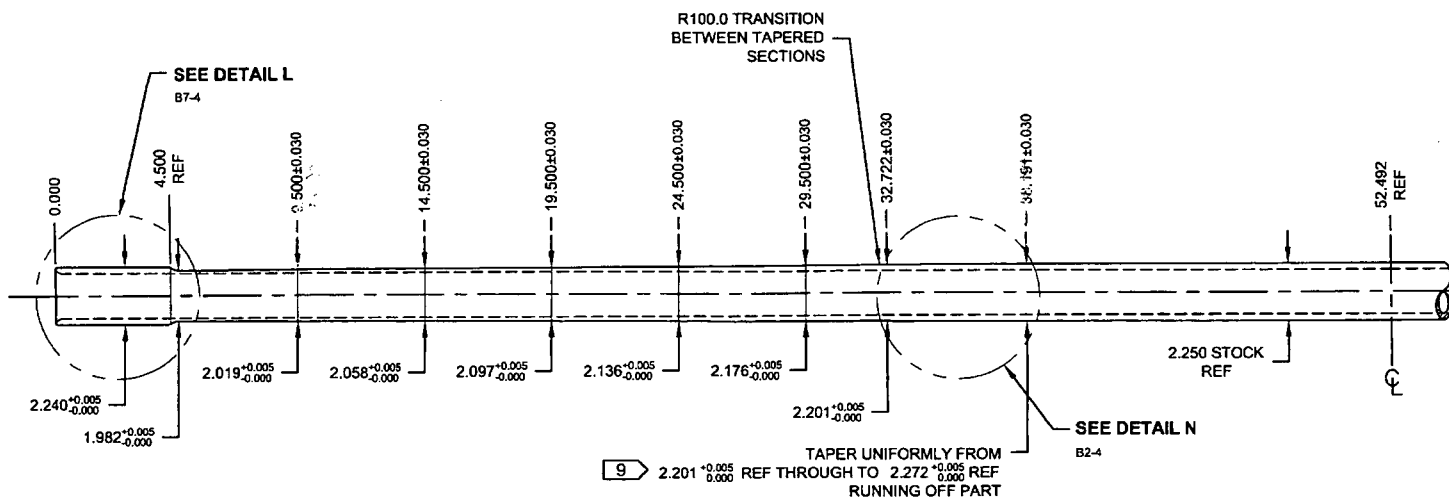


**D206-667-503**  
**BENDING AND DRILLING DETAIL**  
(VIEW LOOKING FWD)



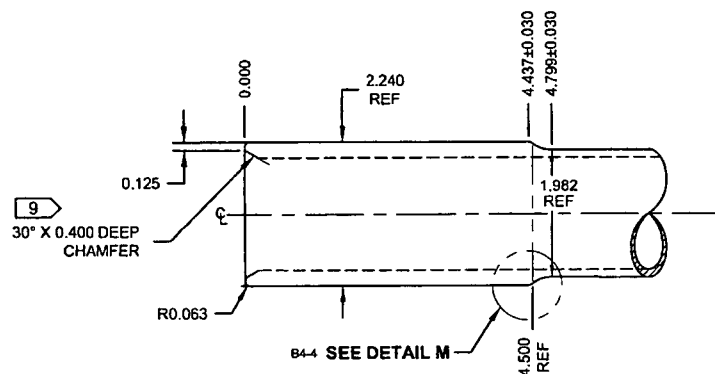
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DESIGN	90	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO.	REV. C
MFG. APPR.	RF	D206-667-143	SHEET 3 OF 4
APPROVED	RF	TITLE	SCALE
DE APPR.	RF	CROSSTUBE ASSY (206L HIGH FWD)	NTS
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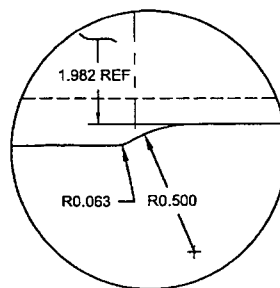


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NO. 53276

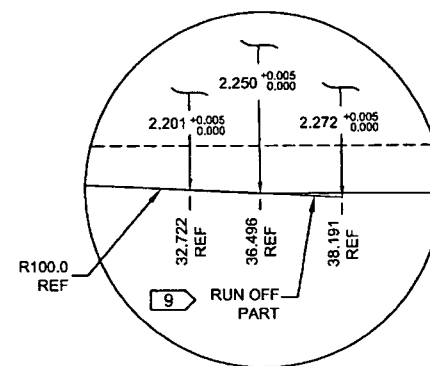
**TURNING DETAIL**



**DETAIL L:  
CROSSTUBE CUFF**  
D7-4 NOT TO SCALE



**DETAIL M:  
CUFF TRANSITION**  
A6-4 NOT TO SCALE



**DETAIL N:  
TAPER RUN-OFF**  
C4-4 NOT TO SCALE

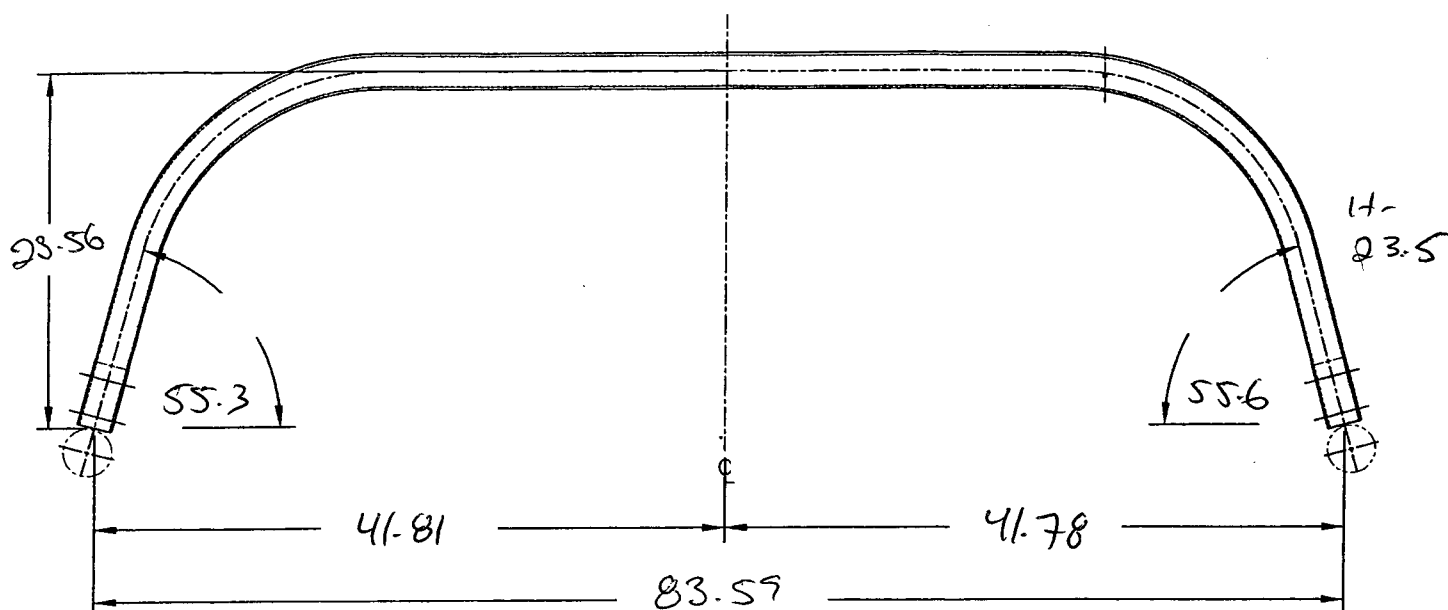
**RELEASED**

DESIGN	9	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	RF	DRAWING NO. D206-667-143	REV. C
MFG. APPR.	RF	SHEET 4 OF 4	
APPROVED	RF	TITLE	SCALE
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DART AEROSPACE LTD		Work Order: 53276
Description: Crosstube High Fwd (206L)		Part Number: D206-667-103
Inspection Dwg: D206-667-143 Rev: C		Page 1 of 1

Required Dimension	Min	Max
Height	23.39	23.65
1/2 Span	41.79	42.05
Angle	54	56
Total Span	83.58	84.10


6



Comments

QC15 Inspection	<i>[Signature]</i>
Date	05.11.13

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	09.06.26	Dimensions updated per Dwg Rev C	KJ	
C	09.10.22	Minimum height dimension revised	KJ	

W/O: 		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



## LIQUID PENETRANT TEST REPORT

P- 15309.

CLIENT	<u>DART Aerospace</u>	DATE	<u>Nov. 18-2009</u>	PAGE	<u>1</u>	OF	<u>1</u>
ATTENTION	<u>LINDA/CHANTEL</u>	ACUREN JOB NO.	<u>108-09-0933</u>	TIME	AM <input checked="" type="checkbox"/>	PM <input type="checkbox"/>	
ADDRESS	<u>1270 ABERDEEN ST.</u>	PO/NO.	<u>- 10791</u>				
	<u>HAWKES BURY ON, KGH 1K7</u>	WORK LOCATION	<u>SAME</u>				
		ACCEPTANCE STD.	<u>ASTM 1417</u>	REV./DATE	<u>2007</u>		
PROJECT	<u>F. P. I. ON CROSS TUBES</u>						
ITEM(S) EXAMINED	<u>4 UNITS</u>						

JOB DESCRIPTION	PROCEDURE NO. <u>LT-0002</u>	REV./DATE	TECHNIQUE NO. <u>LT-1417</u>	REV./DATE
PART NO.	MATERIAL <u>ALUMINE ALUMINUM</u>	THICKNESS		
SCOPE	<u>WET FLUORESCENT LIQUID PENETRANT INSPECTION</u> <u>CARRIED OUT 100% EXTERNAL</u>			

TEST DETAILS	
METHOD <input checked="" type="checkbox"/> FLUORESCENT <input type="checkbox"/> VISIBLE	<input checked="" type="checkbox"/> WATER WASH <input type="checkbox"/> SOLVENT REMOVABLE <input type="checkbox"/> POST EMULSIFIED
FAMILY BRAND <u>MAGNA FLUX</u>	BLACK LIGHT S/N <u>16459</u> <input type="checkbox"/> OUTPUT > 1000 $\mu$ W/cm <sup>2</sup> <input type="checkbox"/> AMBIENT < 2 fc
PENETRANT <u>ZL 67</u> MINIMUM DWELL TIME <u>45</u> MIN.	LIGHTING EQUIP. <input type="checkbox"/> FLASHLIGHT <input type="checkbox"/> TROUBLELIGHT <input type="checkbox"/> OUTPUT > 100 fc @ SURFACE
PENETRANT REMOVER <u>H2O</u> MINIMUM DRY TIME <u>&gt;10</u> MIN.	OTHER <u>LABINO</u>
DEVELOPER <u>SKD 52</u> MINIMUM DWELL TIME <u>10</u> MIN.	LIGHT METER S/N
DEVELOPER TYPE <input checked="" type="checkbox"/> NON AQUEOUS <input type="checkbox"/> AQUEOUS <input type="checkbox"/> DRY	CAL DUE DATE <u>DEC. 8-2009</u>

TEST SURFACE	
SURFACE CONDITION <input type="checkbox"/> AS GROUND <input type="checkbox"/> AS WELDED <input checked="" type="checkbox"/> MACHINED <input type="checkbox"/> SHOT BLASTED <input type="checkbox"/> CLEAN BARE METAL	
SURFACE TEMPERATURE <input type="checkbox"/> < -4°C/ 20°F <input type="checkbox"/> -4°C/ 20°F TO 10°C/50°F <input checked="" type="checkbox"/> 10°C/50°F TO 52°C/125°F <input type="checkbox"/> > 52°C/125°F	

RESULTS- <input type="checkbox"/> METRIC <input type="checkbox"/> IMPERIAL	
<u>1 - CROSS TUBE - W.O. 53275</u> ✓ <u>1 - CROSS TUBE - W.O. 53276</u> ✓ <u>1 - CROSS TUBE - W.O. 53277</u> ✓ <u>1 - CROSS TUBE - W.O. 53278</u> ✓	<u>MA 09 11 18</u>

## Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

## Standard of Care

In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

## SIGNATURES

CLIENT REPRESENTATIVE	<u>Sam Titley</u>	DTR #	<u>E-27852</u>
TECHNICIAN (SIGNATURE):	<u>Mike Johnston</u>	REPORT REVIEWED BY:	
NAME (PRINT):	<u>Mike Johnston</u>	NAME	INITIALS
CGSB LEVEL <u>II</u> SNT LEVEL <u>II</u>	CGSB LEVEL <u>II</u> SNT LEVEL <u>II</u>		
CGSB REG. NO. <u>6066</u>	CGSB REG. NO. <u>6066</u>		

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PT Sept 2005

# Work Order ID 53276

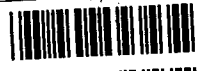
October 30, 2009 1:46:24 PM



Accept



Setup Start



Stop



Item ID: D206-667-103BL

Revision ID:

Item Name: Crosstube Fwd, Blue

Start Date: 29/10/2009 Start Qty: 1.00

Required Date: 09/11/2009 Req'd Qty: 1.00



Cust Item ID:

Customer:

Reference:

Run Start



Stop



Approvals: Process Plan: AP Date: 09-10-30 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								

100



DC

Document Control

DOCUMENT CONTROL

0.00

0.00

Memo

Photocopy bluefile and create labels as per PPP D206-667-103 CHG004

110



Packaging

Packaging

Packaging

Memo

0.00

0.00

REFERENCE ONLY

(IX)

X

MB 09-11-12

120



CNC Bend 2

CNC Alpha 160 Bender

BENDING MACHINE - CROSSTUBES

0.00

0.00

Memo

Bend tube as per Dwg D206-667-143 using CNC bender program

(IX)

X

MB 09-11-11